

Parameters

β_1	Disease 1 per edge transmission rate
β_2	Disease 2 per edge transmission rate
η	1/incubation period = 1/3.38 days
γ	1/infectious period = 1/2.26 days
α	1/protected period = 1/42 days

Individual States

S	Fully Susceptible	S_{12}	Susceptible d2 post d1
E_{01}	Exposed disease 1	S_{21}	Susceptible d1 post d2
E_{02}	Exposed disease 2	E_{12}	Exposed d2 post d1
I_{01}	Infectious disease 1	E_{21}	Exposed d1 post d2
I_{02}	Infectious disease 2	I_{12}	Infectious d2 post d1
P_1	Protected	I_{21}	Infectious d1 post d2
P_2	Protected	R	Fully Recovered

$$N = 10,000 = S + E_{01} + E_{02} + I_{01} + I_{02} + P_1 + P_2 + S_{12} + S_{21} + E_{12} + E_{21} + I_{12} + I_{21} + R$$

